

# Data Analytics in Auditing and Consulting – Part I

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As financial auditing and consulting evolves every year, there seems to be a growing emphasis on utilizing data analytics in new and existing auditing methodologies. Embracing the role that data analytics plays in this aspect, HeinfeldMeech is constantly applying and improving ways to use analytic techniques. These techniques will not only save time on current tests performed but be able to apply a wider and more detailed analysis of large financial data. To give a better picture on the types of methods that are being applied, the purpose they achieve, and the value they give, Part I of this article discusses the firm's use of IDEA Software and IDEA Scripting.

The first and most widely used data analytic software used by our firm is IDEA Software, a specialized analytics program made specifically for performing auditing procedures. IDEA offers a variety of tests and organizational options that can be applied to any dataset via the creation of powerful databases. First, these databases can be made from not only Excel files but PDF, text, and Access files allowing auditing data that only comes in those forms to be filterable for easy analysis. Once created, numerous statistical tests can be applied with ease. This can help diagnose flaws in the datasets as well as apply quick summaries for checking the integrity of the data. These organizational properties of IDEA give all auditors the opportunity to perform analytic procedures on the financial data which can aid in numerous auditing tests. When it comes to specific tests however, IDEA has the capabilities of performing techniques like Fuzzy Matching, Benford's Law, Duplicate Detection, Time

Series and Trend Analyses. These tests are not only easy to run and interpret, but will give a focused and detailed report on the financial data.

Given the abilities within IDEA, it is only natural to expand on its capabilities through automation. This automation can be utilized through IDEA's scripting language. IDEAScript is a coding language based off of Virtual Basic for Applications, or VBA, which gives it functionalities far beyond normal scripting languages. One of these allows the creation of macros, which are programs that run various tests in sequence and give competent analyses without having to manually run the tests. These macros are constantly being made and updated depending on the needs of the audit. Currently the firm employs macros that perform the following tests:

- journal entry keyword analysis
- segregation of duties and journal entry object analytics
- population sampling
- fuzzy matching employees vs. vendors
- user role and IT access analytics
- capital asset analytics
- capital asset year to year comparisons.

Each of these macros provide results in the form of databases that can be exported into Excel for inclusion in the audit documentation. Part II of this article will discuss the firm's use of Python programming.

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